WHAT IS CLAIMED IS:

1. A sensor for sensing at least one physiological characteristic of a patient, the sensor being connectable to a monitor that estimates a physiological condition from signals detected by the sensor, the sensor comprising:

a detector for detecting the signals from the patient which are indicative of the physiological characteristic;

a memory associated with the sensor and configured to store data defining at least one sensor signal specification boundary for the detected signals, the boundary being indicative of a quality of the signals and an accuracy of the physiological characteristic estimated from the signals by the monitor; and

means for providing access to the memory to allow transmission of the data defining the at least one sensor boundary to the monitor.

2. The sensor of claim 1, wherein the boundary includes limits for an AC modulation component of the signals.

3. The sensor of claim 1, wherein the boundary includes limits for a DC component of the signals.

4. The sensor of claim 1, wherein the monitor calculates values from the signals, wherein the sensor signal specification boundary constitutes limits on the AC and DC components of the calculated values, and wherein the AC and DC components are dependent on either a physiological status of the patient, sensor type, or sensor location.

5. The sensor of claim 1, wherein the signals detected from the patient include first and second sets of signals derived from detected light scattered from the patient, the light having first and second wavelengths, the signals derived from detected light each having an AC modulation component and a DC component, and the boundary including limits on the AC and DC components.

6. The sensor of claim 5, wherein the signals derived from detected light are indicative of an arterial oxygen saturation of the patient.

7. The sensor of claim 1, wherein the memory comprises a digital memory configured to store a digital representation of the at least one sensor signal specification boundary, and wherein the physiological characteristic is arterial oxygen saturation.

8. The sensor of claim 1, wherein the monitor determines to display or not display the estimate of the physiological characteristic based on the signals and their relationship relative to a plurality of sensor boundaries and to a plurality of monitor boundaries preprogrammed into the monitor.

9. The sensor of claim 1, wherein the monitor displays an indication of the quality of the signals based on their relationship relative to a plurality of sensor boundaries and to a plurality of monitor boundaries preprogrammed into the monitor.

10. A monitor for providing an indication of an accuracy of an estimated physiological condition of a patient, the monitor being connectable to a sensor that detects signals indicative of at least one physiological characteristic of the patient, the monitor comprising:

at least one receiving circuit configured to receive the signals indicative of the at least one physiological characteristic and data defining at least one sensor signal specification boundary for the detected signals, the boundary being indicative of a quality of the signals detected by the sensor and an accuracy of the physiological characteristic estimated from the detected signals;

at least one processing circuit configured to estimate the physiological condition of the patient based on the received signals, compare the received signals against the at least one sensor boundary, and generate the indication of the accuracy of the estimated physiological condition; and

means for providing the indication of the accuracy of the estimated physiological condition to a user of the monitor.

11. The monitor of claim 10, wherein the at least one sensor boundary is indicative of a transition between a signal regime considered normal for the sensor in its usual application and a signal regime considered to be abnormal.

12. The monitor of claim 11, wherein the at least one processing circuit is further configured to determine whether the received signals are within the normal regime or the abnormal regime.

13. The monitor of claim 11, wherein the at least one processing circuit is further configured to compute an indication of whether the sensor is likely to be applied to patient or has partially or entirely came off the patient.

14. A physiological monitoring system comprising:

a sensor that includes a detector for detecting signals from a patient which are indicative of at least one physiological characteristic of the patient;

a memory associated with the sensor and configured to store data defining at least one sensor boundary for the detected signals; and

a monitor coupled to the sensor and the memory, the monitor includes

at least one receiving circuit configured to receive the detected signals and the data defining the at least one sensor boundary,

at least one processing circuit configured to estimate a physiological condition of the patient based on the received signals, compare the received signals against the at least one sensor boundary, and generate an indication of an accuracy of the estimated physiological condition, and

means for providing the indication of the accuracy to a user of the system.

15. A sensor for sensing at least one physiological characteristic of a patient, the sensor being connectable to a monitor that estimates the physiological condition from signals detected by the sensor, the sensor comprising:

a detector for detecting the signals from the patient which are indicative of the physiological characteristic;

a memory associated with the sensor and configured to store data defining at least one sensor signal specification boundary for the detected signals, the boundary being indicative of a transition between a signal regime considered normal for the sensor in its usual application, and a signal regime considered to be abnormal;

means for providing access to the memory to allow transmission of the data defining the at least one sensor boundary to the monitor.

16. The sensor of claim 15, in which said boundary is characteristic of a model of the sensor.

17. The sensor of claim 15, in which said boundary is characteristic of individual components used in making the sensor.

18. A pulse oximetry system comprising the sensor of claim 15 and further including:

a pulse oximetry monitor having means to determine whether the signals are within said normal regime or said abnormal regime; and

means for informing a user of the system as to whether the signal is normal or abnormal.

19. The pulse oximetry system of claim 18, wherein said means for informing the user is an alarm that is triggered when the signal moves from said normal regime to said abnormal regime.

20. The pulse oximetry system of claim 18, wherein said normal regime is one in which the sensor is likely to be properly applied to the patient and said abnormal regime is one in which the sensor may have partially or entirely come off the patient.

21. A pulse oximetry system comprising the sensor of claim 15, further including:

d) a pulse oximetry monitor having means to determine whether the signals are within said normal regime or said abnormal regime,

e) said normal regime being one in which the sensor is likely to be properly applied to the patient and said abnormal regime being one in which the sensor may have partially or entirely come off the patient, and

f) said pulse oximetry monitor also containing means to compute other measures which indicate a probability that the sensor has come off the patient, and

g) said pulse oximetry monitor also containing means to combine mathematically the indications of items e) and f) so as to compute a net probability that the sensor has come off the patient.

22. A pulse oximetry system comprising the sensor of claim 15 and further comprising:

a pulse oximetry monitor that includes

means to determine whether the signals are within said normal regime or said abnormal regime, said normal regime being one in which the sensor is likely to be properly applied to the patient and said abnormal regime being one in which the sensor may have partially or entirely come off the patient,

means to compute other measures which indicate a probability that the sensor has come off the patient, and

means to combine mathematically indication of whether the signals are within said normal regime or said abnormal regime and the other measures which so as to compute a net probability that the sensor has come off the patient.